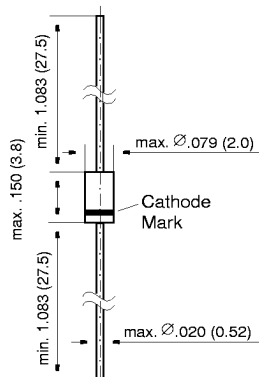


BZX55-C0V8 THRU BZX55-C75

Zener Diodes

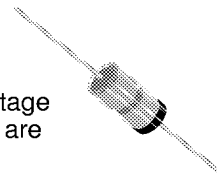
DO-35



Dimensions in inches and (millimeters)

FEATURES

- ◆ Silicon Planar Power Zener Diodes
- ◆ The Zener voltages are graded according to the international E 24 standard. Standard Zener voltage tolerance is $\pm 5\%$. Replace suffix "C" with "B" for $\pm 2\%$ tolerance. Other voltage tolerances and other Zener voltages are available upon request.



MECHANICAL DATA

Case: DO-35 Glass Case

Weight: approx. 0.13 g

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Value	Unit
Zener Current (see Table "Characteristics")			
Power Dissipation at $T_{amb} = 25\text{ °C}$	R_{tot}	500 ¹⁾	mW
Junction Temperature	T_j	175	°C
Storage Temperature Range	T_S	-55 to +175	°C

¹⁾ Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction to Ambient Air	R_{thJA}	—	—	0.3 ¹⁾	K/mW
Forward Voltage at $I_F = 100\text{ mA}$	V_F	—	—	1	V

¹⁾ Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

BZX55-C0V8 THRU BZX55-C75

ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

Type	Zener Voltage range ¹⁾ at $I_Z = 5 \text{ mA}$ $V_Z \text{ V}$	Dynamic resistance		Temp. coefficient of Zener Voltage at $I_Z = 5 \text{ mA}$ $\alpha_{VZ} \% / \text{K}$		Reverse leakage current			Admissible Zener current ²⁾ $I_Z \text{ mA}$
		at $I_Z = 5 \text{ mA}$ $f = 1 \text{ kHz}$ $r_{zj} \Omega$	at $I_Z = 1 \text{ mA}$ $f = 1 \text{ kHz}$ $r_{zj} \Omega$	min	max	$I_R \text{ nA}$	$I_R \text{ mA}$	at $T_{\text{amb}} = 150 \text{ }^\circ\text{C}$ $V_R \text{ V}$	
BZX55 – C0V8³⁾	0.73 ... 0.83	< 8	< 600	-0.25	–	–	–	–	–
BZX55 – C2V7	2.5 ... 2.9	< 85	< 600	-0.08	-0.06	< 10000	< 50	1	135
BZX55 – C3V0	2.8 ... 3.2	< 85	< 600	-0.08	-0.06	< 4000	< 40	1	125
BZX55 – C3V3	3.1 ... 3.5	< 85	< 600	-0.08	-0.05	< 2000	< 40	1	115
BZX55 – C3V6	3.4 ... 3.9	< 85	< 600	-0.08	-0.04	< 2000	< 40	1	105
BZX55 – C3V9	3.7 ... 4.1	< 85	< 600	-0.07	-0.03	< 2000	< 40	1	95
BZX55 – C4V3	4.0 ... 4.6	< 75	< 600	-0.04	-0.01	< 1000	< 20	1	90
BZX55 – C4V7	4.4 ... 5.0	< 60	< 600	-0.03	+0.01	< 500	< 10	1	85
BZX55 – C5V1	4.8 ... 5.4	< 35	< 550	-0.02	+0.05	< 100	< 2	1	80
BZX55 – C5V6	5.2 ... 6.0	< 25	< 450	-0.01	+0.06	< 100	< 2	1	70
BZX55 – C6V2	5.8 ... 6.6	< 10	< 200	0	+0.07	< 100	< 2	2	64
BZX55 – C6V8	6.4 ... 7.2	< 8	< 150	+0.01	+0.08	< 100	< 2	3	58
BZX55 – C7V5	7.0 ... 7.9	< 7	< 50	+0.01	+0.09	< 100	< 2	5	53
BZX55 – C8V2	7.7 ... 8.7	< 7	< 50	+0.01	+0.09	< 100	< 2	6	47
BZX55 – C9V1	8.5 ... 9.6	< 10	< 50	+0.02	+0.10	< 100	< 2	7	43
BZX55 – C10	9.4 ... 10.6	< 15	< 70	+0.03	+0.11	< 100	< 2	7.5	40
BZX55 – C11	10.4 ... 11.6	< 20	< 70	+0.03	+0.11	< 100	< 2	8.5	36
BZX55 – C12	11.4 ... 12.7	< 20	< 90	+0.03	+0.11	< 100	< 2	9	32
BZX55 – C13	12.4 ... 14.1	< 26	< 110	+0.03	+0.11	< 100	< 2	10	29
BZX55 – C15	13.8 ... 15.6	< 30	< 110	+0.03	+0.11	< 100	< 2	11	27
BZX55 – C16	15.3 ... 17.1	< 40	< 170	+0.03	+0.11	< 100	< 2	12	24
BZX55 – C18	16.8 ... 19.1	< 50	< 170	+0.03	+0.11	< 100	< 2	14	21
BZX55 – C20	18.8 ... 21.2	< 55	< 220	+0.03	+0.11	< 100	< 2	15	20
BZX55 – C22	20.8 ... 23.3	< 55	< 220	+0.03	+0.11	< 100	< 2	17	18
BZX55 – C24	22.8 ... 25.6	< 80	< 220	+0.04	+0.12	< 100	< 2	18	16
BZX55 – C27	25.1 ... 28.9	< 80	< 220	+0.04	+0.12	< 100	< 2	20	14
BZX55 – C30	28 ... 32	< 80	< 220	+0.04	+0.12	< 100	< 2	22	13
BZX55 – C33	31 ... 35	< 80	< 220	+0.04	+0.12	< 100	< 2	24	12
BZX55 – C36	34 ... 38	< 80	< 220	+0.04	+0.12	< 100	< 2	27	11
BZX55 – C39	37 ... 41 ⁴⁾	< 90 ⁴⁾	< 500 ⁵⁾	+0.04	+0.12	< 100	< 5	28	10
BZX55 – C43	40 ... 46 ⁴⁾	< 90 ⁴⁾	< 600 ⁵⁾	+0.04	+0.12	< 100	< 5	32	9.2
BZX55 – C47	44 ... 50 ⁴⁾	< 110 ⁴⁾	< 700 ⁵⁾	+0.04	+0.12	< 100	< 5	35	8.5
BZX55 – C51	48 ... 54 ⁴⁾	< 125 ⁴⁾	< 700 ⁵⁾	+0.04	+0.12	< 100	< 10	38	7.8
BZX55-C56	52.0 ... 60.0 ⁴⁾	< 135 ⁴⁾	< 1000 ⁵⁾	typ. +0.1 ⁴⁾	–	–	–	–	–
BZX55-C62	58.0 ... 66.0 ⁴⁾	< 150 ⁴⁾	< 1000 ⁵⁾	typ. +0.1 ⁴⁾	–	–	–	–	–
BZX55-C68	64.0 ... 72.0 ⁴⁾	< 200 ⁴⁾	< 1000 ⁵⁾	typ. +0.1 ⁴⁾	–	–	–	–	–
BZX55-C75	70.0 ... 79.0 ⁴⁾	< 250 ⁴⁾	< 1000 ⁵⁾	typ. +0.1 ⁴⁾	–	–	–	–	–

¹⁾ Tested with pulses $t_p = 5 \text{ ms}$.

²⁾ Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

³⁾ The BZX55–C0V8 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be “F” instead of “Z”. Connect the cathode lead to the negative pole.

⁴⁾ at $I_Z = 2.5 \text{ mA}$

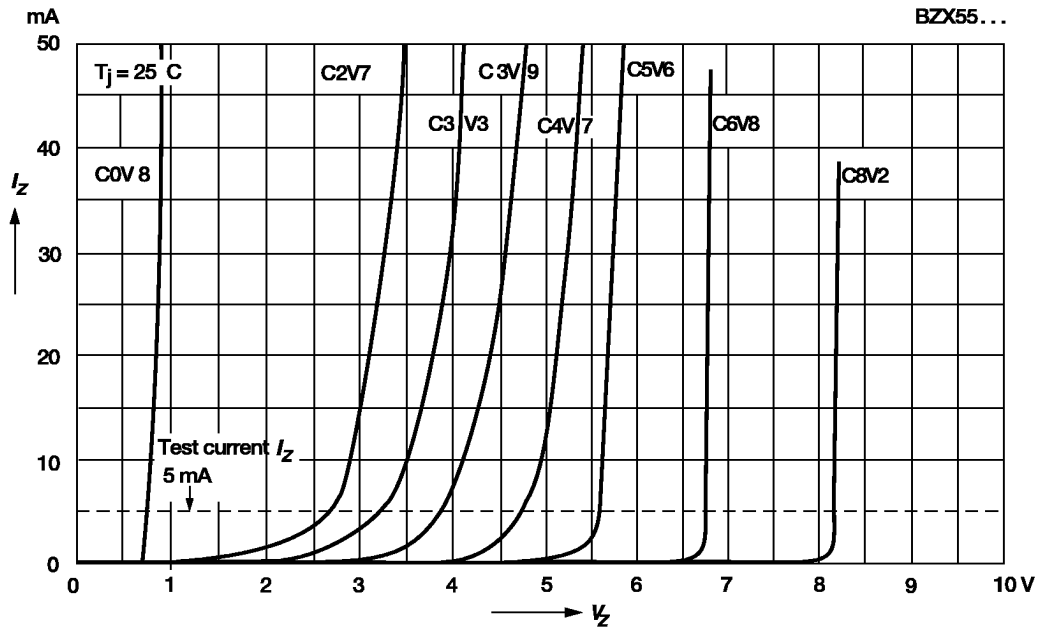
⁵⁾ at $I_Z = 0.5 \text{ mA}$



RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

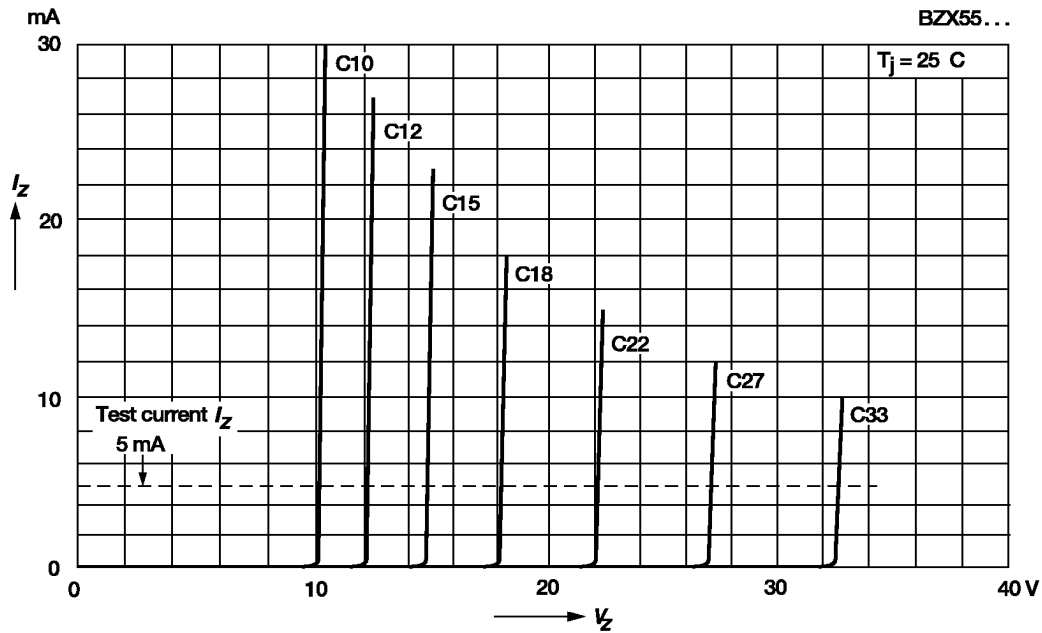
Breakdown characteristics

at $T_j = \text{constant (pulsed)}$



Breakdown characteristics

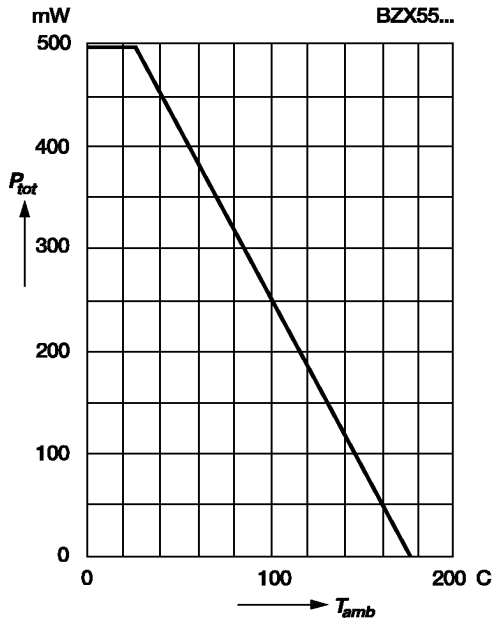
at $T_j = \text{constant (pulsed)}$



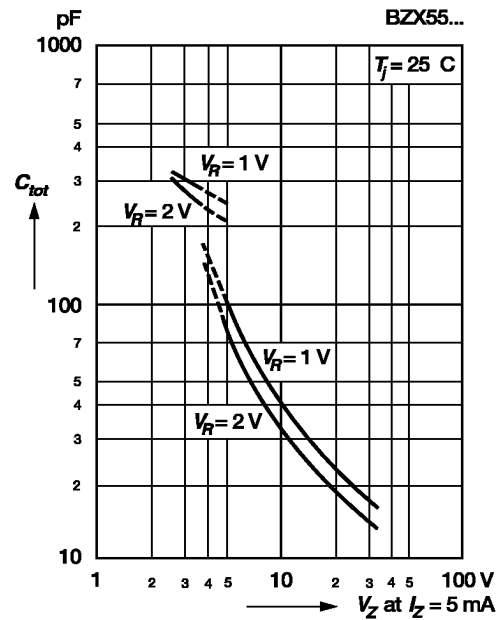
RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

Admissible power dissipation versus ambient temperature

Valid provided that leads are kept ambient temperature at a distance of 8 mm from case.

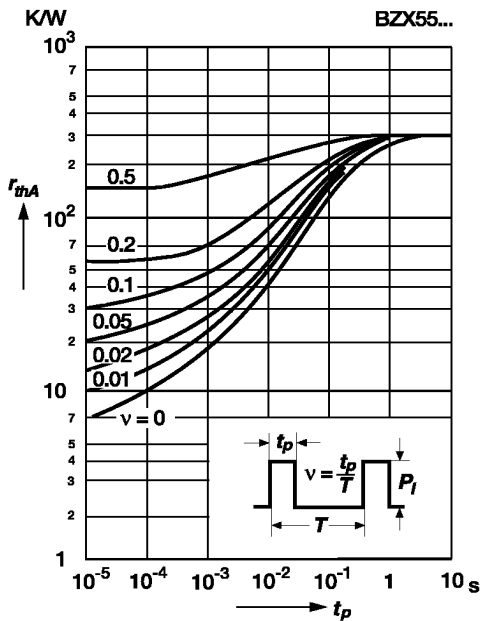


Capacitance versus Zener voltage

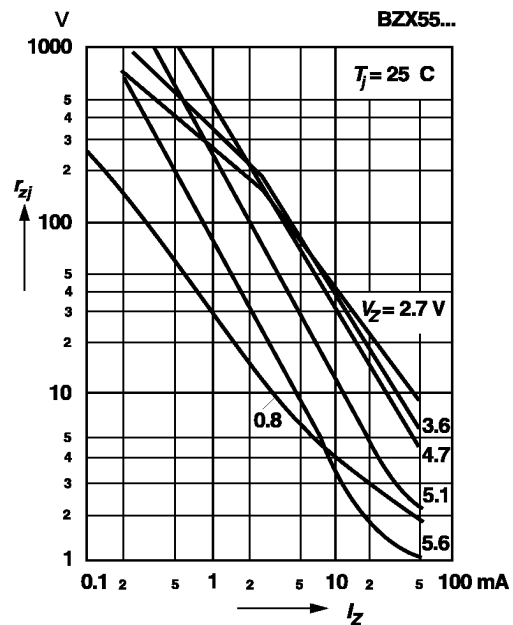


Pulse thermal resistance versus pulse duration

Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

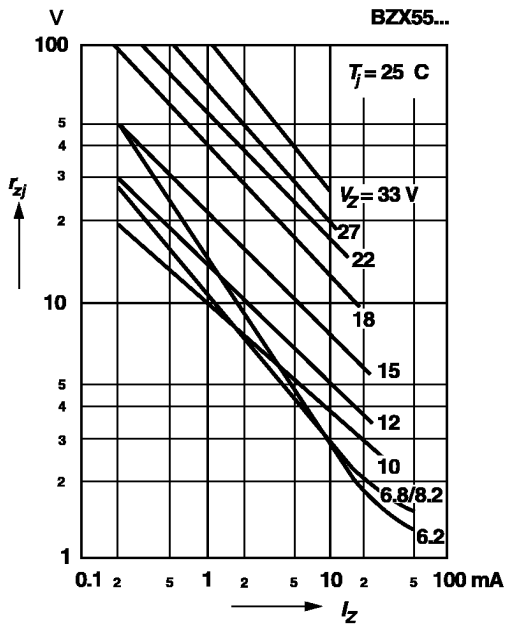


Dynamic resistance versus Zener current



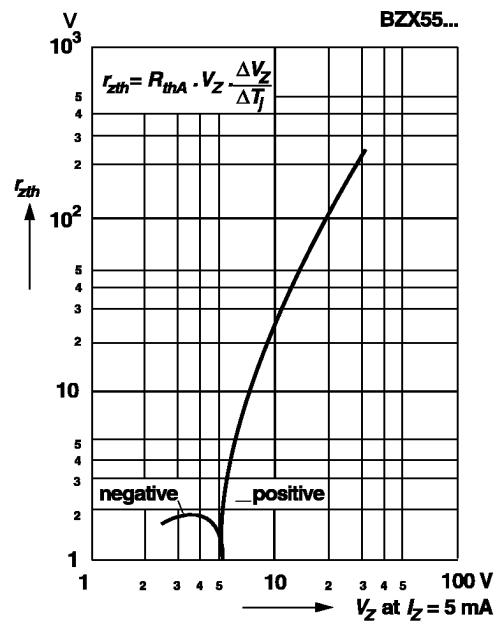
RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

Dynamic resistance versus Zener current

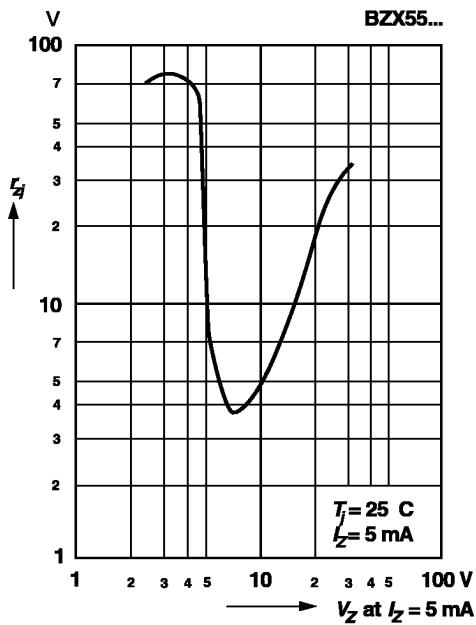


Thermal differential resistance versus Zener voltage

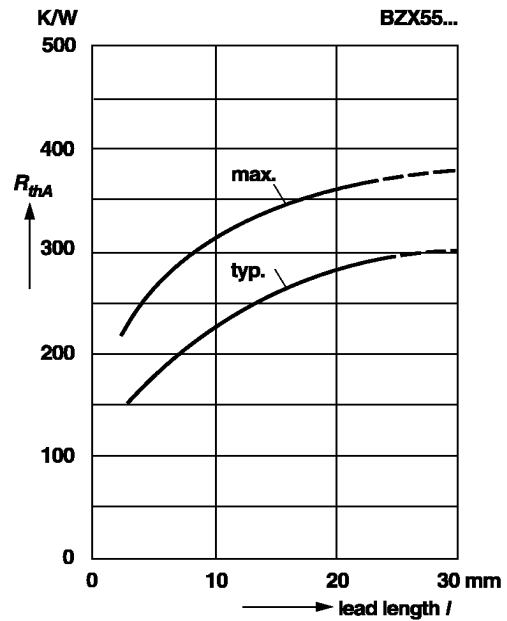
Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



Dynamic resistance versus Zener voltage

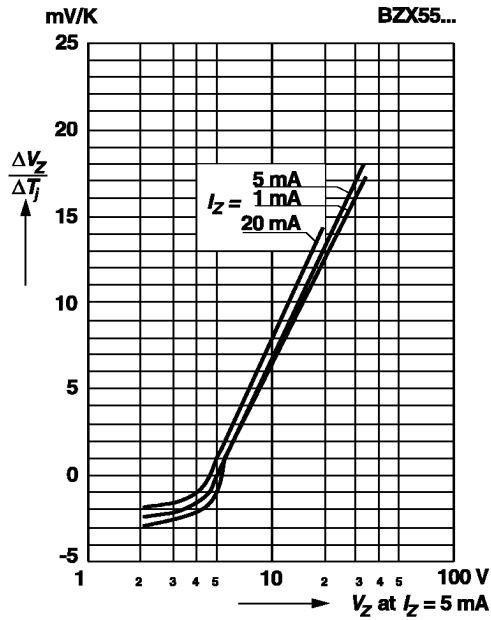


Thermal resistance versus lead length

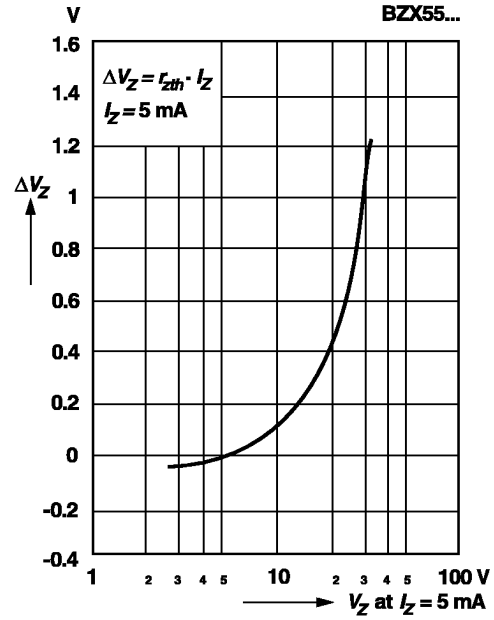


RATINGS AND CHARACTERISTIC CURVES BZX55-C0V8 THRU BZX55-C75

Temperature dependence of Zener voltage versus Zener voltage



Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



Change of Zener voltage versus junction temperature

